Table S1 Characteristics of included studies

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Auther | Country/Year | N | Age(y)/Gende | Causes | Drugs | Combination drugs | Appearance (d) | Main symptoms | Sign | T(℃) | Blood routine | Stool test |
| Youn Y | Korea/2018 | 1 | 13/M | acuteotitis media | amoxicillin-clavulanate | nonsteroidal anti-inflammatory drugs(NSAID) | 3 | AP, nausea, vomiting, BD(6-7 times/d) | abdominal tenderness in the periumbilical area | → | WBC↑,CRP→,HB→ | K.oxytoca(+) |
|  |  | 2 | 15/M | NA |  amoxicillin | probiotics | NA | AP, BD（10 times/d） | mild tenderness in the periumbilical area | → | WBC↑,CRP→ | K.oxytoca(+) |
| Kazuyuki Tanaka | Japan/2017 | 1 | 65/F | Eradication of HP |  amoxicillin 1500mg  | 500 mg of metronidazole and40 mg of vonoprazan  | 8 |  abdominal pain ,hematochezia | NA | NA | WBC、CRP↑，HB→ | K.oxytoca(+),C.difcile and other pathogenic bacteria(-) |
| Hoffmann KM | Austria/2010 | 1 | 15/F | acute urinary tract infection | intravenous amoxicillin-clavulanate therapy | mefenamic acid | 3 | AP accompanied by macroscopically BD | NA | NA | WBC↑，CRP↑ |  K.oxytoca(+),C .difficile and C. difficile toxins A and B, Campylobacter, Salmonella, Yersinia, enterohemorrhagic E coli, rotavirus, norovirus, ,adenovirus(-) |
| Philbrick AM | USA | 1 | 63/M | sinusitis prophylaxis after a dental implantprocedure | amoxicillin 500 mg tid |  ibuprofen,tamsulosin ascorbic acid calcium carbonate vitaminD and loratadin | 1 | watery diarrhea,BD and AP | Active bowel sounds | Normal | WBC↑，hemoglobin and hematocrit were also withinnormal  | K oxytoca(+), Salmonella,Shigella, Campylobacter and Escherichia coli 0157:H7(-) |
| Högenauer C | Austria/2006 | 1 | 36/M | Sinusitis | amoxicillin–clavulanate | NA  | 7 | abdominal cramps, BD | NA | NA | WBC↑，CRP↑ |  C. difficile, campylobacter, salmonella,yersinia, shigella, and E. coli O157(-). K. oxytoca(+) |
|  |  | 2 | 28/F | Tonsillitis | amoxicillin–clavulanate | NA  | 4 |
|  |  | 3 | 63/F | Eradication of HP |  amoxicillin and metronidazole | Metronidazole、NSAID  | 5 |
|  |  | 4 | 37/F | Tonsillitis | amoxicillin Clavulanate  | NSAID  | 3 |
|  |  | 5 | 53/M | Eradication of HP | amoxicillin and clarithromycin | Metronidazole | 4 |
| Yamada M | Japan/2014 | 1 | 14/F | Tooth loss | amoxycillin 0.75g qd po | No | 3 | AP,BD | NA | → | WBC↑，CRP↑ | C.difficile toxin A and B, C. difficile i(-).Salmonella, Shigella, Vibrio, Campylobacter,Yersinia, and pathogenic Escherichia Coli(-),K. oxytoca (+) |
| Abe K | Japan/2014 | 1 | 67/F | Eradication of HP | amoxycillin | clarithromycin and lansoprazole | 3 | AP and hematochezia | NA | NA | WBC↑，CRP↑ | K. oxytoca (+),C.difficile toxin(-).  |
| Zhou | China/2009 | 1 | 70/F | toothache | (Aminobenzylpenicillin 0.5g tid）\*1d | Tinidazole | 1 | BD（3-6 times/d） | Normal | → | WBC→ | NARBC 200/HP、WBC 10/HP、OB(+) |
| Zhang | China/2003 | 1 | 36/F | Eradication of HP | （amoxycillin 0.5g tid | Losec, Mosapride | 9 |  lower AP,BD（>10times/d） | NA | → | WBC 、HB→ | stool cultures (-) |
| Wang  | China/2004 | 1 | 65/M | URI | （amoxycillin 0.5g tid）\*2 | No | 2-5d | lower abdominal cramps,BD | pain in the umbilical or lower abdomen, no rebound tenderness and muscle tension | → | WBC↑ | Streptococcus faecalis |
|  |  | 2 | 41/M | URI | （amoxycillin 0.5g tid）\*3 | Shuanghuanglian、Tablete Glycyrrhiza、Compound Vitamin C-Yinqiao Tablets |  | Umbilical cord colic, BD | → | WBC ↑ | Escherichia coli |
|  |  | 3 | 65/F | URI | （amoxycillin 0.75g tid）\*5 | Tablete Glycyrrhiza，Compound Vitamin C-Yinqiao Tablets |  | Colic in the umbilical cord, BD | → | WBC↑ | stool cultures (-) |
|  |  | 4 | 53/M | URI | （amoxycillin 0.5g tid）\*2 | No |  | umbilical pain in the umbilical cord, BD | → | WBC→ | stool cultures (-) |
|  |  | 5 | 37/F | URI | （amoxycillin 0.75g tid）\*2 | No |  | umbilical cord cramps, BD | → | WBC↑ | stool cultures (-) |
| Liu | China/2002 | 1 | 41/M | URI | amoxycillin 0.5g tid | Shuanghuanglian | 2 | AP, diarrhea (dark brown water), BD | Umbilical tenderness, bowel sounds | Normal | WBC→ | OB(+)，RBC、WBC(+) |
|  |  | 2 | 65/F | URI | amoxycillin 0.75g tid |  Tablete Glycyrrhiza,Compound Vitamin C-Yinqiao Tablets | 4 | Abdominal pain, tenesmus,bloody diarrhea | NA | NA | WBC→ | OB(+)，RBC(+)，WBC 5/HP |
| C. Langner | Germany/2001 | 1 | 31/M | URI | amoxycillin | No | 5 | Abdominal pain, nausea, vomiting, bloody diarrhea | NA | NA | NA | No evidence of pathogenic bacteria in microbial stool examination |
|  |  | 2 | 33/M | Helicobacter pylori infection | amoxycillin | metronidazole | 6 | Abdominal pain, bloody stool | NA | NA | NA |
|  |  | 3 | 30/M | Acute tonsillitis | amoxycillin | No | 4 | Abdominal pain, bloody stool | NA | NA | NA |
| Miller AM | Australia/1998 | 1 | 49/F | Helicobacter pylori infection | amoxycillin | metronidazole, ranitidine | 3 | severe lower abdominal pain and diarrhoea(20次/d),bright red blood per rectum. | flushed, tenderness in the left and right ileac fossa, but no signs of peritonitis.  | 37.2 | WBC↑，HB→ |  stool cultures and an assay for Clostridium dzficiletoxin A were negative.  |
|  |  | 2 | 25/M | acute bronchitis |  amoxycillin and clavulanate |  ranitidine,cisapride  | 2 |  diarrhoea(4次/d),severe cramping lower abdominal pain ,fresh blood per rectum. | flushed | 36.9 | WBC↑，HB→ |  Stool microscopy leucocytes anderythrocytes, stool cultures (-),C. dzfJicile toxin A (-) |
| Kato S | Japan/1995 | 1 | 5/F | URI | Amoxicillin 400mg | No | 4 | watery stool, after turning to BD, AP,ausea and vomiting | NA | Feveroccur in three patients(37.5 to38.0℃), subsided within 1 to 2 days | WBC↑，ESR↑ | Klebsiella pneumoniae |
|  |  | 2 | 8/M | Dog bite | Amoxicillin 300mg | No | 4 | NA | WBC↑，ESR→ | Streptococcus faecalis |
|  |  | 3 | 6/F | URI | Amoxicillin 700mg | No | 4 | NA | WBC↑，ESR↑ | Klebsiella oxytoca |
|  |  | 4 | 13/F | URI | Amoxicillin 600mg | No | 4 | NA | WBC→，ESR→ | K. pneumoniae |
|  |  | 5 | 10/M | URI | Amoxicillin 750mg | No | 5 | NA | WBC→，ESR→ | K. oxytoca |
|  |  | 6 | 12/M | Epididymitis | Ampicillin 1200mg | No | 5 | NA | WBC↑ | K. oxytoca |
|  |  | 7 | 15/M | Furuncle | ampicillin and sulbactam 1125mg | No | 6 | NA | WBC↑，ESR→ | Eseheriehia coli |
|  |  | 8 | 14/M | dental caries | lenampicllin 750mg | No | 2 | NA | WBC→，ESR→ | S. faecalis |
| Moulis H | USA/1994 | 1 | 74/M | Bronchitis | amoxycillin  | glyburide, nifedipine, furosemide | 3 | "gas-type" pan,nausea,watery diarrhea, BD | No jaundice and enlarged lymph nodes, no obvious abdominal signs | 37.3(99.2℉) | WBC↑ | C.difficile toxin titer and stool cultures negative |
|  |  | 2 | 33M | bronchitis | amoxycillin  | No | 5 | cramping AP, BD | lower abdomen tenderness,anal tenderness,guaiac-negative mucoid material in rectal vault | 37.3(99.1℉) | WBC→ | C.difficile toxin titer and stool cultures negative |
|  |  | 3 | 26/F | URI | amoxycillin  | No | 5 | cramping AP,watery diarrhea, BD | right lower quadrant abdomen tenderness | 37.3(99.2℉) | WBC↑ | C.difficile toxin titer and stool cultures negative,fecal leukocytes on the smear |
|  |  | 4 | 24 | otitis | amoxicillin-clavulanate | Acetaminophen,antihistamine | 5 | APs,watery diarrhea, andBD,nansea and one episode of bilious emesis | suprapublic and left-sided abdominal tenderness，no rebound tenderness | 37.1(98.4℉) | WBC↑ | C.difficile toxin titer and stool cultures negative,blood liquid was appreciated |
| A. Keshavarzian | England/1984 | 1 | 26/M | URI | amoxycillin 250mg tid | No | 2 | AP and profuse BD | dehydrated, diffuse tenderness in the abdomen with normal bowel sounds | 38.5 | WBC↑，Hb came down | Stool microscopy and culture for parasites, amoebae,Salmonella. Shigella. Campylobacter, Chstridium difjicile. and Yersinia were negative |
| Dickinson RJ | England/1982 | 1 | 26/F | URI | amoxycillin | No | 2 | cramping abdominal pains,watery diarrhea passage of copious blood per rectum | NA | NA | NA |  conventional pathogens nor Clostridium difficile, and nocytopathic toxin was detected |
| Sakurai Y | Japan/1979 | 1 | 31/F | URI | amoxycillin 0.75 tid | sulpyrin, phenacetin and codeine phosphate | NA |  bloody diarrhea,colicky AP | Right abdomen or full abdominal tenderness | NA | WBC→，ESR ↑ | E.coli |
|  |  | 2 | 33/M | URI | amoxycillin 0.75 tid | Tetracycline,mephenamic acid | NA | BD,colicky AP | NA | WBC↑，ESR→ | no growth |
|  |  | 3 | 48/M | URI | amoxycillin 0.75 bid | Thiazide | NA | BD、colicky AP | NA | WBC→，ESR→ | K. oxytoca |
|  |  | 4 | 29/M | URI | amoxycillin 1.0 qid | Serratiopeptidase | NA | BD,colicky AP | NA | WBC→，ESR→ | E.coli |
|  |  | 5 | 28/M | URI | amoxycillin 1.0 qid | bromelains and isoproterenoe.mepirizole. ethaverine, deprophylline and methylephedrine | NA | BD | NA | WBC→，ESR→ | E.coli |
|  |  | 6 | 68/F | URI | amoxycillin 1.0 bid | carbetapentene citrate | NA | BD | NA | WBC↑，ESR→ | K. oxytoca,P.Morganii |
|  |  | 7 | 33/F | appendicitis | amoxycillin 1.0 bid | acetaminophen, salicylamide, and caffeine | NA | BD,colicky AP | NA | WBC→，ESR→ | Staph.faec,K. oxytoca |
|  |  | 8 | 35/F | URI | amoxycillin 1.5 tid | Azureresin, Serratiopeptidas,bromhexine | NA | BD,colicky AP | NA | WBC↑，ESR→ | K. pneumoniae, Citrobactor freud |
| Toffler R B | USA/1978 | 1 | 26/F |  root abscess | ampicillin 250mg qid | No | 5 |  AP,BD | moderate diffuse abdominal tenderness and oropharyngeal petechiae on the inside of the lips,pharynx and palate | → | Normal |  stool cultures were negative for enteric pathogens, ova and parasites |
| 　 | 　 | 2 | 22/M | influenza | ampicillin 250mg qid | No | 2 | AP,BD | Normal | → | Normal | stool cultureswere negative for enteric pathogens, ova, and parasites |

Notes:T: Temperature;AP: abdominal pain;BD:bloody diarrhea;USG: ultrasonography;C.difcile:*Clostridium difficile;*K.oxytoca: *Klebsiella oxytoca*;OB:occult blood,+:positive;-:negative;→:normal;↑:elevate;ESR:erythrocyte sedimentation rate;WBC:white blood cell count;NA:not available